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FROM THE INTERNATIONAL CYCLOPÆDIA, BY PERMISSION OF DODD, MEAD & COMPANY, PUBLISHERS.

THE

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INTRODUCTORY

With the present number the NATIONAL GEOGRAPHIC MAGAZINE commences a new series and makes its first appearance as a monthly publication. What shall be its precise scope and function has been the most difficult question its editors have been called upon to determine. From no other point of view is the interdependence of the sciences so manifest as from the geographic. Geography in its broader sense has to do not merely with the physical features of the earth's surface, but with the distribution of animal and vegetable life, with political divisions and subdivisions, with the growth and movement of population, with the progress of human society, with the development of the earth's natural resources, and with commercial intercourse between nations. To cover successfully so vast and so diversified a field is entirely beyond the capacity of any single periodical publication. Either it must restrict itself to physical geography and become largely technical, or it must content itself with briefly chronicling the more notable additions to geographic knowledge in those parts of the world in which its readers are less directly interested, and with becoming more especially the exponent of the geography—physical, political, and commercial—of the continent with which its publication more particularly identifies it. And surely in the case of an American publication this is a sufficiently broad field. There are vast regions of the New World that must continue to tempt the venturesome explorer for many years to come. Here, too, on this continent "the rudiments of empire," in the words of one of our own poets, "plastic yet and warm," political problems are being wrought out on an unexampled scale, a fusion of races hitherto without parallel is going on, and the bounty of nature is being poured out with a more lavish hand than in any other equally extensive portion of the globe. It will accordingly

be the aim of the NATIONAL GEOGRAPHIC MAGAZINE to be American rather than cosmopolitan and in an especial degree to be National. There is hardly a United States citizen whose name has become identified with Arctic exploration, with the Bering sea controversy, or with the Alaska boundary dispute who is not an active member of the National Geographic Society and a contributor to the pages of its magazine. In the Army and Navy the Society is also well represented, and from the gallant and accomplished officers of those important branches of the service it receives from time to time much valuable information. The principal officers and experts of the different scientific bureaus of the Government—the Geological Survey, the Coast and Geodetic Survey, the Smithsonian Institution, the National Museum, the Hydrographic Office, the Naval Observatory, the Weather Bureau, the Bureau of American Ethnology, the Biological Division of the Department of Agriculture, and others—have always been among the most active members of the Society, and the great work that is being done by those several bureaus—a work that is at once the wonder and admiration of foreign scientists—will be regularly discussed in the pages of the magazine by those who are in close touch with if not actually engaged in it. Turning from our own country to the sister republics of the two Americas, we find almost all of them connected with the Society in the persons of their diplomatic representatives, and through the cordial cooperation of these gentlemen the magazine will receive from time to time the latest and most authentic geographic intelligence concerning countries in which the people of the United States are now taking an exceedingly keen and friendly interest. That the magazine will not reach at a single bound the high standard at which those responsible for its management are aiming will scarcely be a disappointment either to its editors or its readers. The measure of its success, however, will not wholly depend upon the efforts of those conducting it. Nothing less than the generous support of that numerous class of the community which is interested in one or another of the different branches of geographic science will enable the National Geographic Society to make its magazine everything that it ought to be and properly equip it for the discharge of its function as THE MAGAZINE OF AMERICAN GEOGRAPHY. To possess a knowledge of the conditions and possibilities of one's own country is surely no small part of an enlightened patriotism, and to the patriotic impulses of the American people no appeal was ever made in vain.

RUSSIA IN EUROPE*

By Hon. Gardiner G. Hubbard, LL. D., *President of the National Geographic Society*

England, the United States, and Russia have each made greater territorial acquisitions during the present century than all the other countries of the world together. In the case of the British empire, these have been larger and more important than those of either the United States or Russia. The United States and Russia have only annexed contiguous territory, save Alaska. Russia when first enrolled among civilized nations, in the time of Peter the Great, had no outlet to any ocean except the Arctic, and consequently no possibility of a navy or of commerce. Since then she has extended her dominion northwest to the gulf of Bothnia and the Baltic sea, building St. Petersburg on the marshes of Finland, south to the Black and Caspian seas, southeast to Afghanistan and China, and in the extreme east to the river Amur and the Pacific.

The acquisitions of the Russian Empire within this century are greater in extent and importance than the whole of European Russia before that time. Her frontier has been advanced toward Stockholm 600 miles, toward Berlin 700 miles, toward Constantinople 500 miles, toward India 1,300 miles. Her territory in Europe comprises more than one-half of that continent; yet with all her great empire she has only three ports, and those on the Black sea, open to navigation throughout the year, the others being closed by ice from three to six months, while from those on the Black sea ships of war have no right to pass into the Mediterranean. Until within one hundred years southern and southeastern Russia were infested with hordes of Tartars and Kalmucks, who overran nearly one-third of Russia—wandering tribes without fixed habitation or permanent government, "marauders, slave-dealers, and vagabonds," who "came, conquered, burned, pillaged, murdered, and went." The first step of Russia when she determined that her empire should belong to the civilization of Europe was the subjugation of these tribes. This has been accomplished by compelling the Tartars

*Annual address delivered May 10, 1895.

and Kalmucks to live within fixed and permanent boundaries, by enrolling the Cossacks into bands of cavalry, and substituting the agricultural for the nomadic life. Many of the tribes, unwilling to give up their wandering life, retired beyond the Caspian sea, and from those regions continued their inroads upon the Russian settlements. Russia, for her own protection, was again obliged to subdue these unruly tribes, and thereby to extend her dominion still farther to the east, until it finally reached a barrier in the Pamir and the mountains of Afghanistan.

PHYSICAL FEATURES OF RUSSIA.

If nature ever made the boundaries of a nation, it determined those of Russia—the Arctic ocean on the north, the Ural mountains on the east, the Black and Caspian seas on the south, and the Baltic sea on the northwest, with Siberia and Trans-Caspia as the natural extension of her empire.

In August, 1881, I left London on a trip to Russia, passing through Antwerp, Berlin, and Königsberg to St. Petersburg; thence to Moscow and Nijni Novgorod. From Moscow I went southeast through Russia over the Caucasus to Tiflis, in Asia; thence to Batoum and Sebastopol, on the Black sea, and from the Crimea north to Moscow. In all this journey of 3,500 miles we crossed no range of mountains, we saw no hills more than five or six hundred feet in height until we reached the Caucasus. It was one broad, level plain from Antwerp to Königsberg, 150 miles in width, bounded on the north by the Baltic, on the south by the Kezberg and the foothills of the Carpathian mountains. Entering Russia, the plain widens, extending northeast 1,500 miles along the coast of the Arctic ocean to the Ural mountains, south to the Black sea and the foothills of the Caucasus, and southeast 3,000 miles to the mountains of Afghanistan. My letters written from the foothills of the Caucasus say: "Only think of traveling from one end of Europe to the other over a plain, neither hill nor mountain in all the route, with scarcely a new scene from morning to night or from one day to another. After two days' and nights' traveling nearly due south from St. Petersburg we have not reached as far south as St. Johns, in Newfoundland."

"Yesterday our route was over great plains with rich black earth, occasional forests, pretty well watered; today, broad level steppes with sandy soil, without a tree in sight. We are trav-

sling through the land of the Cossacks; men and women at every station have Asiatic faces, and wear generally a goatskin coat, with the fur inside, fastened by a girdle. No trace of cultivation, except on the streams which we cross from time to time. These streams flow in low, narrow valleys; the road descends two or three hundred feet into the valleys by curves, and then ascends to the plain to save grading, and this affords the only variation in the scenery."

In this great plain there are five distinct zones of land: The frozen, the forest, the black, the agricultural, and the barren steppes. The black zone, near the center, is the most fertile and thickly inhabited. To the north the country grows gradually less fertile, passing through the forest zone to the Arctic zone, entirely destitute of vegetation. To the south of the black zone the country likewise grows less and less fertile, passing through the agricultural zone to the dry and sandy steppes, entirely destitute of vegetation.

From 200 to 300 miles in width, the black zone extends from Austria, a little north of east, across Russia, over the Ural mountains, far into Siberia. It resembles our prairies; has a rich, black soil of great depth, unsurpassed in fertility. Ridlon says that "all traces of glaciers disappear where the black lands begin and the forests end, while the contrast between the flora of the two regions is complete." American geologists believe that the glaciers extended over the whole of Russia to the Black sea, and that the great level plain which constitutes Russia is due to aqueo-glacial action.

In the northern part of the black zone are occasional groves of oak and birch; traveling north these are succeeded by forests of hardwood, with occasional evergreens. Gradually the hardwood disappears; then we enter the forest zone, pines and evergreens. About one-third of Russia is forest. In this region are immense districts, where the only roads are rivers flowing through interminable walls. Then comes a land of rocks, lakes, and swamps, with isolated and snowy masses rising above the forests and peat-bogs. This is the Arctic zone, and here is Finland, a region of lakes, over eleven hundred in one province; the great forests of pine become small evergreens, reaching a height of 25 feet in 100 years, gaining their maturity in 300 years. Gradually they become yet smaller and are of slower growth. The giant of these forests is the willow, which sometimes reaches

a height of 6 inches. A little farther north the rainfall exceeds the evaporation and river-flow and forms a woodless plain of small lakes and morasses, called tundra, on which neither man nor beast could set foot if the ground were not frozen to the depth of very many feet; in summer melting a little more than one foot. Into this treeless region in summer come innumerable birds of different kinds to build their nests and hatch their young. In autumn they fly south—some to the Crimea, some to Asia, others into Africa. So level is the country that in their flight they rarely reach a height of 500 feet above sea-level. This is the land of the Samoyeds, where agriculture is impossible, and the natives live by fishing and hunting. Still farther north, yet in Russia, is Nova Zembla, 75° north latitude, where no animal life exists; but even here, in this land of ice and snow, several hundred species of lichen have been found. Though the surface of the water is frozen for about nine months in the year, yet fish and animalcule abound, the temperature of the fish varying with the water in which they live, here only a little above the freezing point.

Returning to the black zone, near the latitude of Moscow, and traveling south, first the hardwood gives place to the rich prairie land; then we reach the agricultural steppe, a treeless land, susceptible of cultivation, though lacking in the rich, deep loam of the black zone. Farther south lie the vast barren steppes, in the west a sandy desert, in the east a vast saline plain, formerly the bed of a great lake, of which the Caspian and Aral seas formed a small part. This is the genuine steppe, a country level as the sea, without even a gentle undulation or a particle of cultivation—neither tree nor bush, nor even a stone, to diversify the monotonous expanse. The inhabitants lead a nomadic life, like those of the Arctic region.

The very diversity of the country and the occupations of the people of Russia tend to unity, for the north needs the grain of the south, and the south requires the wood of the north. Middle Russia, that great center of manufactures, without the north and south would lack markets for its manufactures.

MOUNTAINS.

The greatest extent of upland in Russia is near Great Novgorod, southwest of St. Petersburg, where the Valdai hills rise from 800 to 1,000 feet.

[illegible] the Uruguay and Paraná separates Russian from Austrian Poland. [illegible] a range of plateaus nearly [illegible] high, [illegible] the plateau of Lanark, [illegible] feet, extending from the Arctic ocean south [illegible] 200 miles. [illegible] the plateau—gold, [illegible] silver, iron, and coal—with the large and productive mines. In the southeastern part of Russia are the Caucasian mountains, separating Europe from Asia, and ranging from Black sea to the Caspian sea, about 600 miles in length and 100 in width. The ordinary [illegible] mount Elbrus, 18,774 feet above the sea level, 1,000 feet higher than Mont Blanc. Near the center of the Caucasian mountains is Mount Kazbek, 16,953 feet, 1,000 feet higher than Mont Blanc in Savoy. These mountains are covered with snow for several thousand feet, and down their sides flow many glaciers.

[illegible] these mountains or [illegible], which [illegible] half a mile higher than Mont Blanc, [illegible] because there is [illegible] for seven hours [illegible].

Near Kazbek is the pass of Dariel, [illegible] feet high, by which the [illegible] through these mountains. In ancient times this pass, called the "gate of the Caucasus," was guarded by fortress towers, which [illegible] the [illegible] of [illegible] overlooking the pass. When Russia [illegible] the northern part of Persia, the two [illegible] never [illegible] the same power.

At the northeastern extremity of the Caucasus, on the Caspian sea, at Baku, there stands an old temple, where for centuries a fire was kept burning by the fire-worshipers of India and Persia. The people [illegible] believed that the fire was supernatural, [illegible] gift of the god of fire. Modern [illegible] that it came from oil wells, and modern enterprise has [illegible] a great industry. The old temple of the fire-worshipers [illegible], on one side of it the angle [illegible], on the other, a great stone wall [illegible] extending over a mile along the coast, where steamers and [illegible] vessels and large [illegible] of [illegible] and [illegible]. Here is a population of 60,000, which twenty years ago were less than a thousand hundred. The [illegible] the five years [illegible] the past [illegible] Russian [illegible] has [illegible] and [illegible], the future. The petroleum is used for [illegible] the Caspian [illegible] Volga steamers. It is sent up the Volga and [illegible] parts of Russia and is carried by rail from Baku to Batum on the

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] the Hanseatic League. It continued to [illegible] was overthrown by Ivan the Terrible in 1570 and Novgorod became a provincial city. Pskov ceased to exist and Moscow became the capital of Russia.

[illegible] the mediaeval country of the Mongol Tartars or Turkomans, as they are called for over 200 years, from 1240 to 1440, ruled unchallenged over all Russia. The Russians were conquered as [illegible] from a peaceful Russian state to a vassal of the Asiatic and the Tartars. With the Tartar hordes came [illegible] an Asiatic civilization. Russia, one of the foremost countries of Europe, was ordered the conquest of Russia, and for [illegible] years it was a [illegible] country. Moscow was captured and the king of Poland reigned there for thirteen years. The people of Novgorod and Pskov [illegible] Moscow, burning a large part of it, and finally expelled the Poles. But not until they had made the profound mark of the Russians. This was the last invasion of Russia that left its impression on the country.

Tartar tribes, [illegible] Mongols, are the most numerous of the population of Russia. In the northwest they intermarried and [illegible] with the Finns or [illegible] Mongol Tartars. In comparison to the Russians [illegible] Russian [illegible] with the Cossacks and Crimean Tartars and are [illegible] to the Great Russians. The Cossacks are Russians who pushed their way to the great steppes of the Volga and Don rivers. They are a race apart from civilization and formed bands of horsemen, called often by the country in which they lived, as the Don Cossacks. They resemble in many respects the cowboys of America. They occupied the frontier and the country north of the Black Sea, with Tartar tribes near Tambov, Kazan, [illegible].

[illegible] mixed, there are Tartars, Armenians, Poles, Swedes, Georgians, and Turks—and, in the different areas—we find Greek, Catholic, [illegible] Protestant, Jewish, Mohammedan, Hesychists and pagan religions of all kinds. These variants more formerly intermingled, but the official action of the Mohammedan religion among the Tartar tribes has prevented intermarriage of the various races and has proved a great obstacle to homogeneous national organization. Language

[illegible] in Portugal, [illegible] where at [illegible] of the [illegible], given by an [illegible] of [illegible] [illegible] Not [illegible] was [illegible]; the [illegible] of [illegible] [illegible], were a Pole, a Jew, an Armenian, a Caucasian, a Georgian, a Tartar, a Mongolian, and, finally, a Russian.

In a Tartar [illegible] there is a [illegible] of [illegible]. Near one end stat[illegible] the Mohammedan [illegible], at the other the [illegible] temple. In Eastern [illegible], on the other hand, [illegible] of the Finns and [illegible] is causing the banding of [illegible] races.

CHARACTERISTICS OF THE POPULATION

Russia in Europe, with a population of [illegible], has, [illegible] the only [illegible], having only fifteen inhabitants to the [illegible] and [illegible]. The population is increasing at a [illegible] than [illegible] of [illegible].

A peasant with [illegible] life [illegible] gives [illegible] type of [illegible] of [illegible]. The word [illegible] means the [illegible] of [illegible] and part of [illegible]—but is of the [illegible], not of the country [illegible], [illegible]. The [illegible] of Russia, except at St. Petersburg, are [illegible] all far apart, and have little communication with [illegible] and [illegible] on the population. The Russian peasant has therefore little knowledge either of [illegible] of [illegible]. He is [illegible] from [illegible] and [illegible] illiterate. Only [illegible] and [illegible] proportion of population live in the [illegible] of Russia, [illegible] of the United States.

Two-thirds of the population, including [illegible] and little Russians, live [illegible] black soil, with Moscow as a center. It is [illegible] that [illegible] of [illegible] and other [illegible] [illegible] [illegible] of [illegible] [illegible] [illegible] number are Poles and [illegible] Jews.

It is impossible that in one generation an [illegible] population of [illegible] should have made any [illegible] advances. The [illegible] of habits are, therefore, [illegible] as they were [illegible]. [illegible] in [illegible] while there are [illegible] in Asiatic, yet the blood has [illegible] time to time, [illegible] very many generations, [illegible] mingled with the blood of the Asiatics, and therefore which [illegible] less civilized.

The highly civilized man makes nature accommodate to his

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

and the manners of the west. Formerly they used the German language [illegible] in their private intercourse [illegible], but now Russian is the language of the court and has been adopted in polite society. The upper classes are as highly educated, as [illegible], and as polished as any of the upper classes in Europe.

The peasantry, recently serfs, in their feelings and habits are Asiatic, faithful to ancient manners and customs. They look upon innovation and change with distrust. St. Petersburg is the type of the new ideas, Moscow of the old.

We now turn to northern and Arctic Russia, a country with features very different from that we have just described. In the west is Finland, formerly subject to Sweden, but annexed to Russia in 1809. The race and origin of the Finns is a [illegible] problem. They are supposed to be of the same stock as the Hungarians and Bashkirs. In summer the [illegible] are nearly constant and the growth of vegetation continuous and rapid.

The [illegible] strongly built, and well provided with [illegible] square windows. They are [illegible] honest, and [illegible]. Their [illegible] language [illegible] at the [illegible] and [illegible] to have been introduced [illegible] about [illegible] years [illegible].

In the written language [illegible] is employed with [illegible] perfect consistency. [illegible] "the most harmonious of [illegible] tongues." They are better [illegible] than the Russians. Serfdom was never introduced [illegible] that they have never [illegible]. [illegible] while we regard the Russians as Asiatics we must look upon the Finns as Europeans. North-east of Finland, on the Arctic [illegible] north [illegible] where the shores [illegible] toward the [illegible] year where [illegible] life and [illegible] called Samoyeds. [illegible], without a [illegible], without a [illegible]. Their dwellings are [illegible] built of poles, open at the top to let out the smoke and covered

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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[illegible]

[illegible]

[illegible]

[illegible] Tsar Ivan [illegible] Tsar Ivan [illegible] Tsar Ivan [

July and continues through August and September. Some of the articles for sale are brought by rail, but most by barges or steamboat. It is estimated that goods from one point will be two or three times as many weeks on board as other ends of the river.

From Siberia are brought furs and some precious stones that need to be cut and worn on [illegible], and some sorts of felt, impervious to snow or water, heat or cold. From China come caravan teas worth $2.50 per pound, the finest tea that is drunk, and brick tea, the poorest, worth only 15 cents per pound. From Persia come precious stones, fruits, carpets and silks; from Caucasus, shawls, slippers, and oils; cotton from Khiva and Bokhara; grain and wool from Astrakhan; from western Russia, woolen goods, and vast quantities of hardware, tools and steel, while Germany, France, and England sell their goods by sample. There is a palace with rooms for great and small dealers and buyers. There are streets with large shops of stone, brick, and iron. These were found insufficient, and large additional bazaars of a temporary nature are often erected. The same merchants come year after year, and often from generation to generation, and occupy the same bazaars. Some come on horseback with their stores, others with steamers towing barges laden with merchandise. Near by on the river lie iron sheds, nearly a mile in length, heaped with wrought iron, rolled bar, and cast iron, sheet iron, and copper plates, wire, hollow ware, stoves, nails, and all descriptions of rough iron work. Here also are men from far lands of many creeds—Armenians, Chinese, Tartars, Buddhists, Cossacks, and Americans.

After the fair is over, at the end of August or first of September, the place is deserted, stores and bazaars closed, the goods are taken away and not a soul is seen in the place where only a few days before three or four hundred thousand people were gathered. The bridge of boats which connects the fair-ground with Nijni is taken down and removed for the winter.

TRAVELING

The different methods of traveling show the habits and civilization of a people. In the far north of Russia the sledge and the reindeer are only used; in Finland the horse and cart or sledge. Travel in summer by land is unusual; they wait for sledging or go by boat. In central Russia they travel by railroad or

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] we had been told that there were no horses at the [illegible]. We took a few provisions with us and found something to eat at one or two of the stations. At [illegible] there was only one common room, which [illegible] and slept on the floors or benches, and as this is also used as a waiting room for travellers by day, [illegible] their horses are being changed, there was little opportunity for sleeping. The Russians carry their own [illegible], but we were not so fortunate, and sometimes [illegible] with straw for our beds.

At the end of the second day we were over the mountains near [illegible]. We stopped at the post-station. Our provisions were gone, and we could get nothing at the station but [illegible], we drove on to Tiflis, a city of over [illegible] inhabitants.

[illegible] This is the [illegible] a beautiful view of Mount Kazbek and the snow peaks of the Caucasus [illegible] city [illegible] two parts, [illegible] new [illegible] and [illegible] houses, [illegible] Russian [illegible], the old part [illegible] Persians, Armenians, Georgians, and [illegible] from the many different tribes of the Caucasus. There are [illegible] where [illegible] parts of the Orient are sold.

* * *

Many causes have been and are still at work that [illegible] the Russians. The first great [illegible] came in the early part of the present century, during the Napoleonic wars, when the Russian armies gathered from all parts of the kingdom, [illegible] the armies of Prussia and Austria. The [illegible] invasion of Russia by Napoleon, the burning of Moscow, followed by the [illegible] of the Russian armies [illegible] Europe, and their entry into Paris in 1814, [illegible] with a [illegible] vision and new ideas. Second, the introduction of steamboats on the rivers, [illegible] war and the fall of Sebastopol, which [illegible] the ruling class to the necessity for railroads and better [illegible] communication between the different parts of the empire, and led to the construction of [illegible] from the north to the south through the length of Russia, [illegible] from the western to

[illegible] boundary transfers [illegible] people [illegible] travel from [illegible] [illegible] that remained was the freedom of the sea in 1871 [illegible] a century of one hundred and fifty years. Fifth, the commercial [illegible] [illegible] to safety [illegible] [illegible] of the country to the sea, through the rich agricultural regions of Siberia, [illegible] the transcontinental [illegible] [illegible] the railroad [illegible] the borders of Persia and Afghanistan, across the desert and the river Oxus to Samarkand, opening up [illegible] and a large part of the rich fertile [illegible] of Russia. Large [illegible] has been created [illegible] from England to Russia, which must greatly benefit Russia and transcontinental [illegible], the export of grain and petroleum from Russia to Europe, which is [illegible] increasing [illegible] money obtained in exchange must greatly benefit the Russian farmer.

The destinies of Asia are in the hands of Russia and England, and are more and more connected with Russia than with England, or rather Russia is have greater affinity with the Asiatics than the English, she will go over them, greater, and the Asiatics are more closely bound to the government of Russia than to that of the English.

There is the interconnection to level up from Asiatics and [illegible]. The day of awakening of progress, of education, of prosperity to the Russian peasant is sure to come, [illegible] the civilization and help of Europe and Asia [illegible] Asiatic [illegible] Russia, with her [illegible] extend up from the Asiatic to the Pacific, will become the [illegible] of the [illegible].

U. S. REVENUE-MARINE STEAMER "ERIE" MOORED TO A FIELD OF ICE IN BERING SEA

THE ARCTIC CRUISE OF THE UNITED STATES REVENUE CUTTER "BEAR"

By Dr. Sheldon Jackson, *United States General Agent of Education in Alaska*

Expeditions in the Arctic have always had a fascination for mankind. From the early voyages of the Scandinavian navigators down to Peary the world has witnessed the men who have been on the dangerous Arctic voyages of necessity, and from time to time, but a little account has been made of the men who have been on the same dangerous for many years in succession, and particularly of the United States revenue cutters that have ventured into these icy regions for sixteen years past. The service begun in 1867 with the purchase of the white cutter *Corwin* for the Arctic, followed by the *Jeannette* and an Arctic cruise has been made every season since then. In 1883 the steamer *Rush*, after the rescue of Greely and party at Lady Franklin Bay expired, was transferred to the United States Treasury Department and fitted for the Arctic service. Ship is a sailing-steamer, 158 feet long, 30 feet wide, and 18.5 feet deep, with a [illegible] sailing and steaming fleet, and as an excellent sea boat, as fast ship and handy in the Arctic ocean for work in the ice. The cruises from 1884 to the present time have been [illegible] successful and in many ways remarkable as sailing in the dangerous waters of Arctic America.

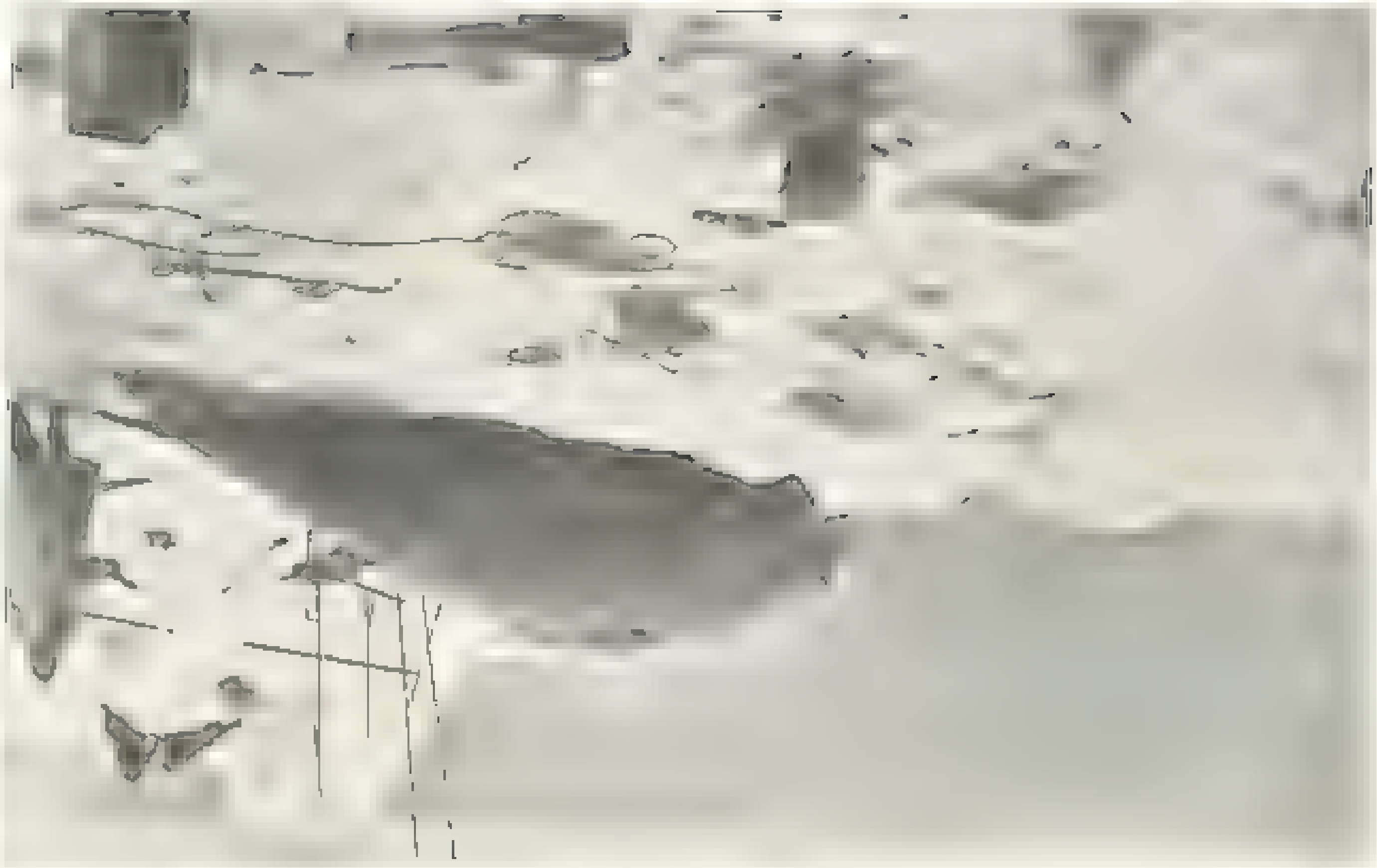
The original purpose of the *Rush* in the Arctic ocean was to carry the mail for the district and to provide a useful place. In addition to the exclusively official duties of a revenue cutter in protecting the interests of the nation, there particularly the prevention of smuggling by the whaling fleet, the steamer has performed the duty of a travelling life-saving station. During these twelve years she has rescued from the icy sea a sterling crew of western and Arctic Alaska, shipwrecked whalers and destitute natives. Not a season passes without one or more whalers

[illegible]

[illegible]

The 4th day of July was spent with the whaling fleet at anchor. A visiting game of base ball, [illegible] a salute of twenty-one guns at noon, with a dinner on the *Bear* to the whaling captains, closed the [illegible] celebration of the day. On July 5 the *Bear* left for St. Michael, where she arrived the following day. On July 8 [illegible] and a trip was made to the native village on Sledge Island. On July 9 the steamer made Bering Strait, calling at East Cape, where four or five [illegible] were taken on board to aid in procuring reindeer. Leaving that [illegible] was [illegible] the vessel [illegible] Arctic Ocean. Early in the morning of July 11 the *Bear*, [illegible] her way through the ice, reached Cape [illegible]. At this place [illegible] deer were purchased [illegible]. [illegible] the coast the *Bear* [illegible] Strait. [illegible] was held [illegible] of ice. On the 14th, [illegible] deer at [illegible], the vessel steamed over to [illegible] deer were secured. [illegible] the [illegible] was compelled to move a few miles farther south. At this [illegible] deer were [illegible] until the *Bear* got under way for the reindeer station at Port Clarence, passing through a gale on the [illegible], reaching port on the 17th, where she anchored. About noon on the [illegible], the [illegible] *Bear* [illegible] deer. The brig *W. H. Meyer*, which was the vessel [illegible] for the station [illegible], was found wrecked on the beach in front of the station, having gone ashore during the gale the night of the 17th. The supplies for the reindeer station had fortunately been landed, but those for the schools at Cape Prince of Wales and Point Barrow were lost.

On July 22 the *Bear* weighed anchor and started for Siberia for another load of reindeer, and July 23 she reached St. Lawrence Bay. On the 24th she steamed to the head of the bay, where [illegible] deer were secured. The next day she returned to the reindeer station, where the deer were landed [illegible]. On the 28th the *Bear*, having taken on board Mr. and Mrs. [illegible], who had been wrecked in the *W. H. Meyer* with their supplies, [illegible] the reindeer station, sailed for Cape Prince of Wales, where they were landed [illegible] afternoon. Again hoisting anchor she steamed off for Kotzebue Sound. On the way the schooner *Jeanie* was boarded and examined. On July 30 the *Bear* anchored



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THE SCOPE AND VALUE OF ARCTIC EXPLORATIONS*

By General A. W. Greely

In the limits of twenty [illegible] one can but touch in a desultory way on the great [illegible] the [illegible] of [illegible] from the [illegible] of the Geographical Congress, yet a somewhat general outline of the scope and value of Arctic exploration may not be amiss.

It is, however, rather [illegible] to present [illegible] Arctic exploration that appeals so strongly to the popular fancy. [illegible] no adequate idea of [illegible] we must turn to the original journals, [illegible] in the great White North by those men whose "[illegible] [illegible]"

In these volumes will be found [illegible] beset not only months, but years, of ice-packs, [illegible] extent, thickness, and masses so enormous that description conveys no just idea; of [illegible] constant [illegible] of land marches when exhausted [illegible] leaving traces of blood on snow or rock, of [illegible] journeys over [illegible] masses of ice, when humble [illegible] straining at the drag-ropes, struggled on because the failure of one [illegible] the safety of all, of [illegible] weeks of constant [illegible] at least [illegible] the reason in the [illegible] of continuous Arctic darkness, of silence [illegible] ies, but are yet more startling by astounding phenomena that [illegible] of darkness, of continuous [illegible] the world has been cast out of its orbit in the planetary universe [illegible] lowed [illegible] threaten with time to unsettle the reason [illegible] observations want-

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*[illegible] address [illegible] 18[illegible]

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The visit of Liakhoff to the New Siberian Islands disclosed there an enormously rich wealth of fossil ivory, the Siberian trade in which was only second in value to the extraordinary stock of furs that grew out of the explorations of the Arctic valley of the [illegible] by Russian hunters. From Hudson's voyage to the bay of his name arose also the establishment and development of the extremely valuable fur trade of the Hudson Bay Company. Behring failed to determine the definite geographic relations of the continental shores of Asia and America, but his voyages directly resulted in the very extensive and valued fur trade which has proved so profitable through a century and a half.

Altogether, it may be asserted that in addition [illegible] the [illegible] regions have furnished to the civilized world pro- [illegible]

Were [illegible] of credit of commercial ends, scientific knowledge, or the glory of difficult enterprise realized in accomplishment have alone turned men to the polar regions [illegible] of Iceland [illegible] the Greenland [illegible] link [illegible] Christianity [illegible] civilization and [illegible] heroic Christian endeavor that [illegible] the Moravian [illegible] has kept alive during the [illegible] phases of Greenland history. As the [illegible] says:

Not for country, nor for fame,
Nor alone to gain [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

In recent days Great Britain, [illegible] and Denmark, [illegible] the United States [illegible] whose efforts have been [illegible] through the more successful one — that of educating [illegible] civilization and the [illegible] — are a part of the glory of our times. The residence of [illegible] among the most interesting natives and of Peary with the Etah Eskimo have, it is to be expected, [illegible] along these lines [illegible] sympathy for these dwellers on the [illegible] edge of the world. Every lover of humanity will rejoice that Denmark, with the Christian [illegible] that has always marked its policy towards the Greenland [illegible] has extended its [illegible] to east Greenland and established a [illegible] at Angmagsalik for the benefit of the natives. May we not hope that

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[illegible] Pachtussof, Krusenstern and Ziwolka stand forth in the annals of the world.

In Nordenskiöld and Torell Sweden finds examples that have not been [illegible] in the [illegible] [illegible].

Of [illegible] it was said that the [illegible] of [illegible] and of [illegible] — not by the [illegible] but by the [illegible] — was pointed out and [illegible] the [illegible] of the [illegible] were joyfully given [illegible] of the new world [illegible] higher [illegible] generation.

A German-American [illegible] was a petty officer under [illegible] Franklin, and among the [illegible] engaged in the Franklin search none had a more [illegible] and generous spirit than the American, Elisha Kent Kane. Hayes, [illegible] to reach his "Open Polar Sea," [illegible] all his Arctic [illegible] in the War for the Union. De Long and Ambler knew how to die, but [illegible] less [illegible]. Hall [illegible] the Arctic [illegible] Lockwood, whose [illegible] and suffering [illegible] the farthest north and yet the goal beyond which some more fortunate rival will soon pass, not with fortune and sweetness the harsh fate which debarred the [illegible] from [illegible] save on his grave.

I can scarcely say a word of British effort in a field that has been peculiarly England's for the past three centuries. And how, among her [illegible] Arctic [illegible], can I single out representatives worthy [illegible] of British [illegible]? Like Macbeth's [illegible] line [illegible] of [illegible].

Great were the daring navigators of the sixteenth and seventeenth centuries — Frobisher and Davis and [illegible], Baffin and Weymouth, Bylot and [illegible] — but were they greater than in their way were Cook, Hearne, and Mackenzie in the eighteenth?

And [illegible] worthy [illegible] of the present, there is [illegible] room for the names of [illegible]. Here are Britain's [illegible]:

Austin, Back, Beechey, Belcher, Clavering, [illegible] Fitzjames, [illegible] Inglefield, [illegible] Kellett, Kennedy, Lefroy, [illegible] McClure, Maguire, [illegible], Nares, [illegible] Osborn, Penny, Pim, Rae, Richardson, [illegible] Ross, John Ross, Sabine, Saunders, Scoresby, [illegible] and [illegible] Simpson, and Stewart.

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GEOGRAPHICAL LITERATURE

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The Good Beginnings of the Mind. A study of life in Europe and America. By John R. Spears. Pp. [illegible], with illustrations. New York: G. P. Putnam's Sons. 1916.

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[illegible] miles; [illegible] 8,400 miles; [illegible] Argentine Republic, 8,000 miles; Mexico, [illegible] miles; Brazil, [illegible] miles; [illegible] miles; Bogota, [illegible]

The information concerning the railways of South and Central America is of especial interest, although great progress has been made in the extension of lines during the past year. The value of the report is enhanced by the insertion of the well-known map of the world issued by the Hydrographic Office of the United States Navy Department in June, 1892, which shows tracks of full-powered steam vessels, with [illegible] lines, and probably contains a larger amount of information [illegible]

[illegible]

possessions on the map in both graphic and tabular form, increases its usefulness. The distances between different ports on the east and west coasts of North and South America and the shores of the gulf of Mexico and Caribbean sea are also given. The volume is furnished with a copious index.

EXECUTIVE REPORTS

The annual reports of the cabinet officers, recently transmitted by the President to Congress, contain many items of geographic interest.

WAR DEPARTMENT.—The Secretary of War states that since [illegible] $30,500,000 has been appropriated for the improvement of the Mississippi river, of which [illegible] has been directly applied to general improvement of navigation. The greater part of this amount has been expended in two reaches of the river, each 90 miles long, one extending 90 miles below Memphis and the other 90 miles above Vicksburg. The result has been to increase the depth of the river at low water by [illegible]. For the improvement of the Missouri river, which for years has had practically no navigation, $5,000,000 has been appropriated. The Secretary questions the propriety of further appropriations for this river.

With regard to the proposed Chicago drainage canal, a board of engineer officers state that the abstraction of [illegible] cubic feet of water per second from lake Michigan will lower the level of all the great lakes except Superior, and reduce the navigable capacity of all harbors and channels, but to what extent cannot be foretold at this time.

The Yellowstone National Park has now 170 miles of good roadway, [illegible] giving access from the entrances to the principal points of interest. It is proposed that [illegible] miles of additional roads, now [illegible], be opened, which will complete the general scheme of highways.

The Apache Indian prisoners, numbering about [illegible], have been removed to the Fort Sill reservation, which is being gradually brought to [illegible]

The defenseless condition of our principal coasts and harbors and the necessity of liberal appropriations is strongly presented.

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NEW MAPS

United States Coast Pilot, published by the Hydrographic Office, United States Navy. [illegible] 1905, with [illegible], scale [illegible], and price [illegible]

[illegible] Forbes, No. 14[illegible] Lake Superior, Toronto Harbor, [illegible] x [illegible] 9.377, $0.[illegible] No. [illegible], Lake Huron, Saginaw Bay, [illegible] about to [illegible] x [illegible], [illegible] 0.75, $0.[illegible] No. 147[illegible], Lake Michigan, [illegible] x 34.5, [illegible] = 5.[illegible], $0.75. No. [illegible], Lower Lake and approaches, [illegible] x 55.7, [illegible] = 5.[illegible] $0.75. [illegible] The Great Lakes [illegible] special and Harbor [illegible] x 13.2, [illegible] = 0.[illegible] $0.[illegible]

[illegible], No. 14[illegible] Lake Ontario, 30.3 x 37, M = 1.5, $[illegible]

[illegible], No. 1463, Bermuda and Great Sound, showing Castle and Port Royal Islands and Hamilton Harbor, [illegible] x 26.[illegible] M = 4.0, $[illegible]

[illegible], No. [illegible], approaches to Pearl City [illegible] x 22.5, M [illegible] $0.[illegible] No. 1[illegible] Approaches to Pearl City Lagoon, with plan of Pearl City [illegible] 24.[illegible] x 17.[illegible], M = 1.0, $0.[illegible]

[illegible], No. [illegible] Connecticut River, approaches to New Haven Harbor, [illegible] x 20.7, M [illegible] 1.0, $0.[illegible]

[illegible] Connecticut River, [illegible] x [illegible], M = [illegible] and approaches to the Connecticut River, [illegible] x [illegible], M = 0.[illegible]

[illegible] No. [illegible], Port Santa Juliana, [illegible] x 16.[illegible], $[illegible]

[illegible] Port Santa Elena, [illegible] x 17.[illegible] M = 2.[illegible], $0.[illegible] No. [illegible]

[illegible], [illegible] x 12.[illegible] M [illegible] $0.[illegible] No. [illegible] Lake Nyasa

M [illegible] 50.2[illegible] No. [illegible] Hamburg, [illegible] x [illegible], [illegible]

[illegible] No. [illegible], Port [illegible] x [illegible], M = 2.0, $0.[illegible] No. [illegible], Fernando [illegible] Island Sound, [illegible] x [illegible], M [illegible] 0.25, $[illegible] No. [illegible] Port Antonio, [illegible] x [illegible], M. [illegible] 1.0, $[illegible]

PROCEEDINGS OF THE NATIONAL GEOGRAPHIC SOCIETY, SESSION 1896-97

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NORTH AMERICAN NOTES

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NATIONAL GEOGRAPHIC MAGAZINE

Important Aids in Teaching Geography

National Geographic Monographs

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THE

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Among the contents of forthcoming numbers will be articles, for the most part illustrated, on the Panama, Nicaragua, and Tehuantepec routes; on Venezuela, by Mr. W. E. Curtis, late Chief of the Bureau of the American Republics; on the Geography, People, and Resources of Costa Rica, by General Richard Villafranca, Commissioner-General to the Atlanta Exposition; on Some Recent Explorations in the Foothills of the Andes of Ecuador, by Mr. Mark B. Kerr; and on Some Physical Features of Lake Superior, by President M. W. Harrington.

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OF

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PANAMA, NICARAGUA, AND TEHUANTEPEC ROUTES.

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